

**Responses to Comments in Letter USO3 from  
Charles E. Martin, Sumas Energy 2, Inc.**

*Note: The responses listed below are numbered to correspond to the numbers shown  
in the right-hand margin of the preceding comment letter.*

1. The text in the summary of potential impacts has been changed to better reflect its intent, as follows:

The increase in pumping from the municipal wells potentially could result in drawing nitrate-contaminated water from the Abbotsford-Sumas aquifer into the city wells at higher concentrations than are currently present. This could compromise the quality of the potable water available to the city of Sumas, resulting in a significant adverse impact on the potable water supply.

2. The text of the SEIS is correct as written. However, to reduce the potential for misunderstanding its intent, the SEIS has been revised as follows:

S2GF would extract a maximum of 802 gpm, with a total annual usage of 1,025 acre-feet, which would no longer be available for wells and surface water discharge. Because of the current limitations on the city of Sumas water rights, this use would preclude other new commercial, municipal, or industrial water users from being able to obtain large quantities of water from the city, unless the city was able to obtain an additional source of water.

3. Section 3.9 of the SEIS has been revised to clarify that SE2 proposes to install a variety of noise control measures. Section 3.9 also clarifies that the final selection of noise control measures is an iterative process, so it would be inappropriate to try to list the specific measures in the SEIS. Instead, the SEIS recommends that the SCA include a special provision requiring SE2 to submit 20% and 50% design packages (along with predictive modeling based on the design) for review by EFSEC before plant startup. This would provide SE2 the opportunity to perform an iterative design process to develop cost-effective noise control measures.
4. The description of the proposed mitigation for flooding has been revised in the Final SEIS to reflect the applicant's commitment to perform additional flood modeling and to provide reasonable mitigation measures for flood impacts, if warranted.
5. The additional information provided by SE2 has been reviewed in preparing the Final SEIS. Seismic engineering can be and has been used to mitigate the majority of earthquake risks. Nevertheless, the fact that mitigation measures are available to address this hazard does not mean that the hazard is insignificant. Accordingly, the description of the potential impact has been revised as follows:

A distant great earthquake or local moderate to large earthquake could have a significant impact on the project because of the potential for strong ground motions to damage the facility or pipeline.

The following has been added to the fifth bullet under Mitigation:

...At a minimum, the design criteria for all earthquake-sensitive structures associated with the facility would comply with Seismic Zone 3 standards of the Uniform Building Code (UBC) or other national or state of Washington seismic design standards that supercede the UBC standards.

6. The revised site plan (Figure 2.3-1) has been used in the Final SEIS.
7. Comment acknowledged.
8. No change has been made to Section 2.2.1.5. This section of the SEIS falls under “Section 2.2.1 Project Description Changes Not Requiring Analysis in the SEIS.” As indicated on page 2-7, the changes described in this section as presented in the Second Revised ASC reduce or eliminate significant adverse impacts previously analyzed in the FEIS and do not warrant additional analysis in the SEIS.
9. (First paragraph). Section 3.1 of the SEIS has been revised to include a table comparing the CO<sub>2</sub> emission factor for the S2GF with higher emission factors for other types of thermal power plants. This table shows that combined-cycle combustion turbines emit less CO<sub>2</sub> than other common power plants.

(Second paragraph). The comment includes the statement that “If the proposed [S2GF] facility operates, it will operate instead of other less efficient fossil fuel-fired facilities...”. However, during the adjudicative hearings SE2’s own expert witness (Dr. David Montgomery) testified that the S2GF is unlikely to displace existing base-load power plants because the S2GF will probably have a higher dispatch price than existing plants. Regardless, Section 3.1 of the SEIS has been revised to include a new section entitled “Potential Detrimental Effect of Proposed Greenhouse Gas Mitigation.” The new section discusses how requiring greenhouse gas mitigation only on the newest, cleanest power plants could impose a slight financial disincentive that could favor increased operation of existing, higher-emitting, power plants.

10. As described in the response to Comment 9 (first paragraph), the SEIS has been revised to indicate that combined-cycle combustion turbines (such as the S2GF) are the cleanest type of thermal power plant currently available. In addition, SE2’s proposal to fund an estimated 6% offset of the plant’s CO<sub>2</sub> emissions is a positive step. However, exception may be taken to the comment that “In other words, it [S2GF] will more than fully offset its emissions.” If built, the S2GF would be one of the largest point sources of CO<sub>2</sub> emissions in the Pacific Northwest. SE2’s proposed emission fees would fund a lower percentage of greenhouse gas offsets than are provided by other current programs in the

Pacific Northwest. The SEIS has been revised to compare SE2's proposal to these other ongoing programs.

11. Comment acknowledged.
12. The text of Section 3.3.5 has been revised to indicate that the use of groundwater for this facility would essentially preclude other new commercial, municipal, or industrial water users from being able to obtain large quantities of water from the city of Sumas *unless the city is able to increase the water rights that are available to it*. Currently, obtaining water rights for large quantities of water in the Sumas area would likely be difficult to accomplish. Given the limited quantity of water currently available to the city, the lack of water available for other large water users as a consequence of providing water to this project (as specified in the City of Sumas Comprehensive Water Plan) is a significant unavoidable adverse impact.
13. Section 3.1 has been revised to describe the A-weighting methodology.
14. Table 3.4-1 of the Draft SEIS has been deleted, recognizing that the estimated sound power levels listed in that table are no longer valid. The Final SEIS acknowledges that the design of cost-effective noise control measures is an iterative process. Section 3.4 has been revised to recommend an additional mitigation measure that should be required before SE2 is allowed to start the plant. The new recommended mitigation would require SE2 to submit 50% and 90% design reviews for noise control and noise modeling, to demonstrate that SE2 has adequately addressed noise impacts during design of the facility.
15. The recommended noise mitigation measures in Section 3.4 have been revised based on testimony given during the adjudicative hearings. The revised mitigation measures recommend establishment of low-frequency ambient limits based on the current Oregon noise standard: 65 dB and 62 dB at the 32 Hz and 64 Hz octave bands, respectively. These recommended ambient limits would apply at any existing dwelling in either the United States or Canada (regardless of land use classification at the dwelling) and would apply to any parcel with Residential zoning, regardless of whether a dwelling currently exists on the parcel. The recommended mitigations would also require SE2 to submit the results of the post-startup monitoring within 60 days after startup, and that SE2 would be required to immediately initiate retrofit noise control measures to correct any measured exceedance of the low-frequency ambient limits.
16. Please see response to Comment 14.
17. The Final SEIS recommends that the current Oregon ambient noise limits should be applied for this project, as a special condition in the SCA (see response to Comment 15). Doing so would benefit both the public and SE2. The public would benefit because it would be assured that a well-demonstrated noise standard has been recognized and applied to minimize potential impacts due to low-frequency noise at all nearby dwellings. SE2 would benefit because its noise control engineers would have an objective criterion

with which to begin their iterative design of cost-effective control measures. Numerous existing power plants are already operating in Oregon in full compliance with that state's noise regulation, so it does not appear that use of those limits is inappropriate for the S2GF project.

18. This information was received after the Draft SEIS was published. The information has been reviewed and the Final SEIS has incorporated information as appropriate as discussed below. The figure showing the revised wetland mitigation plan has been included in the Final SEIS.
19. The applicant's comment states that the Draft SEIS does not segment the palustrine forested/scrub-shrub (PFO/SS) wetland from the lower quality farmed wetlands for rating purposes. Jones & Stokes prepared the Draft SEIS using guidance from Ecology (1993) regarding how wetlands are rated in Washington. The applicant has used the same guidance document in the Second Revised ASC and in its comments on the Draft SEIS. The Draft SEIS rated the complex of contiguous farmed wetlands and palustrine forested (PFO) and scrub-shrub (PSS) wetlands on the S2GF site to identify appropriate wetland mitigation ratios.

Guidance from Ecology (1993) relative to segmenting contiguous wetland areas for rating purposes includes the following information:

- Hydrologic regime
- Size, configuration, and distribution of the wetlands
- Presence of human-made structures
- Recognition that dual ratings should not be applied to Category 2 and Category 3 wetlands (e.g., a wetland area cannot receive a Category 2/3 rating); only Category 1 wetlands under certain conditions, such as a forested wetland, can be segmented to receive dual ratings

Information provided by the applicant in the Second Revised ASC and in the wetland mitigation plan (Bexar 2000) identified the 8.8-acre PFO/SS wetland as a Category 2 wetland. Therefore, the Draft SEIS used Ecology's guidance that Category 2 wetlands cannot receive a dual rating and the Draft SEIS identified the PFO/SS and farmed wetland as one wetland unit.

The applicant's comment on the Draft SEIS states that Ecology's guidance on hydrologic regime can be used as the basis to segment wetlands for rating purposes. However, the applicant does not discuss how size and configuration of wetlands, human-made structures, or dual ratings may affect the wetlands rating.

Guidance from Ecology (1993) for hydrologic regime and size states that:

Wetlands that are not small and isolated often form large contiguous areas which can extend over hundreds of acres. This is especially true in river valleys where there is some surface water connection between all areas of the floodplain. The primary criterion that should be used to identify wetland boundaries is the water regime. Boundaries between contiguous or connected wetland should be set at the point where either the volume, flow or velocity of the water changes significantly.

Based on Ecology's guidance, segmenting wetlands can be done on large wetland systems connected by surface waters such as rivers, streams, and their tributaries. Although SE2 states that the Sumas River, Johnson Creek, or Sumas Creek do not influence the wetlands on site, they do lie within the Sumas and Johnson Creek floodplains (Bexar 2000). Jones & Stokes' review of the wetland information provided by the applicant, a site visit, and reviews of aerial photographs indicate the site is somewhat isolated by SR 9 to the south and an industrial pad to the west and northeast, limiting the extent of the wetland to something less than large contiguous wetlands extending over hundreds of acres. However, Jones & Stokes acknowledges Ecology does not provide strict guidance on how large a wetland system should be in identifying boundaries for contiguous wetlands along a stream corridor or within a floodplain. Therefore, there is room for interpretation to consider the 17 acres of PFO/SS and farmed wetlands as a sufficiently large system to segment boundaries for rating the wetlands.

Although the hydrologic regime is likely to be similar in the PFO/SS wetland and in the farmed wetlands (wetland hydrology in both is supported by direct precipitation and seasonally high groundwater), the constructed ditch east of the PFO/SS wetland is a physical feature separating the movement of surface water between the PFO/SS and farmed wetland to the east. Ecology (1993) acknowledges that natural or constructed features such as berms, dams, dikes, and weirs may be used to separate large wetland systems. However, in Appendix A of the same Ecology (1993) document, Ecology states wetlands should be rated without regard to property boundaries, including constructed features, provided there is a level surface water connection between the two parts of the wetland. Therefore, Ecology's guidance on human-made features can lead to some ambiguity in rating wetlands and the ditch could be used as a feature to segment wetlands.

Since the Draft SEIS was prepared, Jones & Stokes reviewed aerial photographs to document the period of time the PFO/SS wetland has been a separate vegetation community from the surrounding wetlands. A review of historic aerial photographs (1965, 1981, and 1984) shows that the PFO/SS wetland has been developing as a separate system from the surrounding farmed wetlands for at least 35 years. Therefore, the SEIS has been revised to rate the PFO/SS wetland as a Category 2 wetland and the farmed wetland/emergent wetland area as a Category 3 wetland. This revision is based on the following:

- Guidance from Ecology regarding what constitutes a large wetland complex in a floodplain is not specific enough to exclude the 17-acre wetland as a large wetland complex.
- Guidance from Ecology is somewhat conflicting regarding the presence of constructed structures to segment wetlands.
- There has been a long-term separation of the 8.8-acre PFO/SS wetland from surrounding wetlands where farming practices have occurred.

Revising the wetland ratings of the farmed and emergent wetland area does not affect the mitigation ratios (see response to Comment 20) since guidance from Washington State on mitigation ratios is similar for Category 2 and 3 wetlands.

The Final SEIS also recognizes the east mitigation area as a Category 3 emergent wetland.

20. The wetland mitigation analysis presented in the Draft SEIS (and Appendix A of the Draft SEIS) was based on information provided by the applicant and previous communications between the applicant and Ecology representatives serving as EFSEC's 401 water quality certification consultant, prior to Jones & Stokes assuming that role. The mitigation analysis presented in the Draft SEIS was based on the applicant's use of ratios, and not a functional assessment methodology to determine whether the mitigation acreage as presented adequately compensates for lost wetland functions.

The response below addresses the following comments provided by SE2:

- Downward adjustment of recommended mitigation ratios
- Enhancement credit for the PFO/SS
- Required mitigation acreage based on adjusted ratios
- Mitigation ratios based on the Washington Function Assessment Method
- Adequacy of mitigation presented by the applicant

**Downward Adjustment of Recommended Mitigation Ratios.** Ratios presented in the Draft SEIS mitigation analysis represent the *minimum replacement ratios* commonly recommended by the state of Washington regarding the management of the state's wetland resources. The 1.25:1 and 2.5:1 mitigation ratios for creation and enhancement, respectively, are typically associated with Category 4 wetlands. Ratios of 2:1 and 4:1 for creation and enhancement, respectively, are typically recommended by the state of Washington for Category 2 and 3 emergent wetlands. Therefore, the mitigation ratios of 1.25:1 and 2.5:1 discussed in the Draft SEIS represent a downward adjustment from the state's guidelines for Category 3 wetlands. The Final SEIS continues to evaluate the mitigation analysis using the 1.25:1 and 2.5:1 ratios for the farmed upland and wetland areas.

**Enhancement Credit for the PFO/SS.** For the 8.8-acre PFO/SS wetland, the Draft SEIS (see Appendix A) used a 6:1 enhancement ratio credit for a portion of the wetland. The SEIS has been revised to identify a 4:1 enhancement ratio for the 4.8-acre forested portion of the wetland and a 2.5:1 enhancement ratio for the 4.0-acre scrub-shrub wetland area. This revision is based on a review of historic aerial photographs (1965, 1981, 1984) that shows the site developing from scattered trees, shrubs, and open ground to the current deciduous tree and shrub cover. In addition, information provided by URS states that field visits confirm large patches of Himalayan blackberry are present in the scrub-shrub component of the wetland.

The SEIS has been revised to state that the PFO/SS wetland can continue to be enhanced by (1) removing Himalayan blackberry, (2) planting native shrubs in patches of Himalayan blackberry, (3) planting coniferous trees to increase the coniferous tree cover over time, and (4) planting of a variety of native shrubs and trees in monocultures of Douglas' spiraea. Implementing these four activities would enhance the development of this deciduous forested/scrub-shrub wetland into a coniferous forested wetland. However, all planting and weed clearing should be done with hand-held tools and without vehicles to minimize disturbance to native plants and soils in the wetland.

The 4:1 and 2.5:1 enhancement ratios identified in the Final SEIS represent a downward adjustment of the state's recommended enhancement ratio of 6:1 for Category 2 forested wetlands and 4:1 ratio for Category 3 scrub-shrub wetlands. This downward adjustment is appropriate in this case, considering the extent of Himalayan blackberry in the scrub-shrub portion of the wetland and that the deciduous forest component can be enhanced in species diversity and habitat complexity, and the potential life of the forested wetland component can be extended by introducing conifers to the system. Conifers are generally longer living trees than deciduous trees such as the paper birch and cottonwoods that are present in the wetland. Although conifers may naturally establish in the wetland over the long term through vegetative succession, planting the conifers would accelerate this process.

**Required Mitigation Acreage Based on Adjusted Ratios.** The SEIS has been revised to reflect the ratios for the PFO/SS enhancement and resultant mitigation acreage credit. Based on the 1.25:1 ratio for creation, 2.5:1 ratio for enhancement of farmed wetlands, 4:1 ratio for enhancement of forested wetlands, and 2.5:1 ratio for enhancement of scrub-shrub wetlands, the total mitigation acreage credit for the 8.8-acre PFO/SS wetland is 2.92 acres. This acreage combined with the 3.61 acres of enhancement credit and 2.98 acres of creation credit totals 9.51 acres of mitigation credit. The 9.51 acres are sufficient to compensate for the 9.45 acres of impact.

**Mitigation Acreage Based on Washington Function Assessment Method.** The applicant's comments also include a discussion of how the mitigation as proposed adequately compensates for the wetland functions that would be lost at the proposed plant site. Jones & Stokes has reviewed the September 20, 2001 summary of wetland impacts and mitigation prepared by URS Corporation, which Jones & Stokes received after publication of the Draft SEIS. This document includes a summary of the results of the

Washington Function Assessment Method (WFAM) URS Corporation conducted to (1) assess the wetland functions to be served by the proposed S2GF site and (2) demonstrate that wetland functions lost by the proposed plant site would be compensated at a ratio greater than 1:1 under the proposed mitigation plan.

URS used the WFAM to individually evaluate 13 wetland functions and then calculate a total wetland function performance for the farmed wetland. This was done for the wetland under current conditions as well as a predicted function performance for the mitigation wetlands 20 years after construction/enhancement. However, based on guidance presented in Chapter 2 of the WFAM, the WFAM appears to be designed to only provide performance indices for individual functions and does not provide a single summary performance index for the wetland area being assessed. The WFAM was not designed to lump functions into group scores (Ecology 1999).

Jones & Stokes acknowledges other similar function assessment methods use an approach of rating individual functions and summarizing the evaluation to develop an overall performance of the wetland (e.g., Montana State Method). Applying other function assessments to the proposed plant site could potentially result in the same conclusions as the applicant's – i.e., the functions can be replaced with the proposed mitigation.

In addition, under a separate process from EFSEC's evaluation of the project for 401 water quality certification, Ecology has stipulated to the WFAM approach and that the mitigation acreage presented by the applicant sufficiently compensates for lost wetland functions from the proposed S2GF plant site. The function assessment method used by the applicant, although different from the ratio method to identify needed wetland mitigation acres, could be a reasonable approach to determine the required mitigation acreage, and one that is consistent with functional assessment methods developed by other entities. However, since it has been determined in the analysis for the Final SEIS that the mitigation acreage is sufficient based on mitigation ratios, it is unnecessary to conduct any additional WFAM evaluations.

**Mitigation Adequacy.** The SEIS has been revised to acknowledge the mitigation as proposed could potentially compensate for the loss of wetland functions from the proposed plant site based on the WFAM analysis.

The Final SEIS also concludes that the mitigation as presented by the applicant, using the mitigation ratios discussed above in this comment response, provides adequate mitigation for the loss of 9.45 acres of wetland from the proposed plant site.

21. The Draft SEIS, Appendix A, states that there is no need to fill wetlands to create upland buffers (see Section 2.5.2 of Appendix A). Appendix A recommends using existing upland areas along the perimeter of the mitigation sites for buffers. The text of the SEIS has been revised to more clearly represent the statement in Appendix A.

The median area between Haul Road and State Route 9 is unavailable for planting upland buffer because of utility rights-of-way owned and managed by the city of Sumas. Therefore, the 2.78 acres of buffer mitigation discussed in the applicant's wetland mitigation summary (URS Corporation 2001) is not available (in accordance with the adjudicative hearings held in conjunction with this project on November 13, 2001).

22. The SEIS has been revised to acknowledge the mitigation requirements for performance standards can be satisfied by using the guidance in publications available from Ecology's wetlands homepage as well as "Success Standards for Wetlands Mitigation Projects – A Guideline" (Washington State Department of Transportation Environmental Affairs Office, Draft August 1999).
23. The SEIS has been revised to acknowledge a restrictive covenant would be placed on all mitigation areas to ensure their long-term preservation.
24. See response to Comment 20 above. Please note that the settlement agreements among Ecology and SE2 and the Washington Department of Fish and Wildlife are processes that are distinct from EFSEC's determination of 401 water quality certification.
25. The SEIS has been revised to describe the current status of flood modeling and the intent of SE2, as reflected in this comment.
26. Comment acknowledged.